Appendix D

Market Examples of the Benefits of Competition

APPENDIX D

Prepared for King County

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In Appendix B (The Theoretical Basis for Market Competition), the economic theories of competition, monopoly and oligopoly conclude that increased competition should result in lower prices and enhanced level and quality of services. In this Appendix market examples -- in non-solid waste industries -- are provided to illustrate the validity of the economic theory. Examples from the Solid Waste Industry are provided in Appendix E.

First, three broad based (i.e., international and nationwide markets) and well-known non-solid waste market examples are provided:

(1) the deregulation of the US Airline Industry;
(2) the Organization of Petroleum Exporting Countries, a cartel representing a monopoly through collusion; and
(3) the break-up of a AT&T, the giant telephone monopoly.

These are followed by three non-solid waste community specific examples from the water and wastewater industry:

(1) the New York City Department of Environmental Protection;
(2) the Massachusetts Water Resources Authority; and
(3) the City of New London, Connecticut.

These cases all demonstrate the benefits of competition as well as the negative impacts on prices associated with establishing a "contract monopoly" though evergreen contracts.

DEREGULATION OF THE US AIRLINE INDUSTRY

From the time of the Civil Aeronautics Act of 1938 until the Airline Deregulation Act of 1978, the airline industry in the United States had no price-based competition for passenger services. Though there were several carriers competing for business, under the national regulatory structure all costs were passed through and were calculated into the prices set by the Civil Aeronautics Board (CAB).[1] The CAB ensured the continued financial stability and profitability of the industry in the medium term using this price setting system.[2] This system of fixed route prices essentially forced firms to compete on a service differentiation basis. The pressures of service-based competition eventually caught up with the market however, as firms over extended themselves by purchasing newer, larger models of aircraft that passenger demand could not fill. As a slowing economy in the later 1960s and early 1970s reduced demand, CAB was put in a position of allowing greater than normal increases, prompting general outcry and Senate

[1] Vietor, Richard H.K. (1990) "Contrived Competition: Airline Regulation and Deregulation, 1925-1988," *Business History Review*, vol. 64, no.1, p. 63
[2] Petzinger, Thomas Jr. (1995) Hard Landing: The Epic Contest for Power and Profits That Plunged the Airlines in Chaos. New York: Random House, pp. 8-9

investigations.[3] These eventually led to 1978's Airline Deregulation Act (ADA). The ADA set a timetable for deregulation, which was to be fully achieved by 1985. Initially, airlines were allowed to cut fared up to 50 percent and to assure a limited number of new routes without CAB approval. The CAB was abolished in 1985.

The ADA led to significant changes in the industry. Price competition associated with ADA led to the disappearances of Braniff, National, Eastern, and Pan-Am airlines. At the same time, new carriers came forward with lower prices and innovative management systems. These included Southwest (a regional carrier prior to ADA), Alaska Airlines, America West, Mid West Express, Air Tran, Tower Air, Air Florida, and others. Price competition associated with ADA also led to drastic fare cuts. Prior to deregulation, when the CAB set the fares, there was no fare competition among airlines. Once deregulated, airlines competed by lowering fares to the break-even point.[4] The benefit of lower fares has continued since the ADA took effect through today, despite consolidation in the industry.[5] In addition to the benefit of lower fares, departure frequencies have also increased and travel times have improved. Morrison and Winston estimate the benefit of these improvements as $18 billion annually to passengers.[6] Since deregulation, a system of fixed per-route fares has given way to a complex system of ever changing fares by classification. It is currently estimated that the industry generates 20,000 new fares per day.[7] For this reason it is difficult to site a generalized reduction. Morrison and Winston (1995) have estimated a per-traveler benefit of $8.00.[8]

As happened in the aftermath of ADA, the airline industry is currently going through a shakeout, with major carriers like United and American Airlines in severe financial distress. Under CAB, these carriers would likely have been protected from the effects of the demand declines that have precipitated the current problems. However, it should be noted that the average fares faced by customers have decreased as airlines face tougher and tougher competition for the existing demand.[9] Even though the current drop in travel demand has adversely affected the companies that constitute the airline industry, the increase in competition has benefited travelers through fare decreases.

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[3] Meyer and Oster (1981). Airline Deregulation: The Early Experience. Boston, MA: Auburn House Publishing Company, pp. 19-20

[4] Kahn, Alfred E. "Surprises of Deregulation," *American Economic Review*, vol. 78, no. 2, pp. 316

[5] Morrison, Steven A., and Winston, Clifford (1995) The Evolution of the Airline Industry, Washington: The Brookings Institution.

[6] Note: Adjusted from $6 billion 1977 value using CPI. See Morrison and Winston (1995).

[7] "A Business Traveler Who Hates to Fly," *The New York Times*, March 25, 2003

[8] Morrison, Steven A., and Winston, Clifford (1995) The Evolution of the Airline Industry, Washington: The Brookings Institution.

[9] "A Business Traveler Who Hates to Fly," *The New York Times*, March 25, 2003

Though it was not a monopoly prior to the ADA, the airline acted as a single price setter under CAB. That is, the industry had no price competition, and a consumer could not find alternative prices by searching between competitors. After deregulation, price competition became one of the main areas of competition between firms, and prices dropped significantly.

ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES

The OPEC cartel provides another illustration of the effect of competition in a market of limited competition on the price of goods and services. Led by Saudi Arabia, the Organization of Petroleum Exporting Countries is a cartel of independent states who have exhibited an ability, at times, to control the overall level of international production of oil, with an aim of limiting production in order to hit preferred price points. OPEC first exhibited its ability to establish price levels during the Tripoli-Tehran crisis of 1970-71 when curtailment by OPEC countries pushed barrel prices from $1.80 to $2.18 before tax.[10] OPEC manipulation during the Middle East war in 1973 created a shortfall of 7% and pushed the barrel price to $10.46.[11] A "second oil crisis" in 1979 pushed prices above $16 per barrel, even though physical capacity now covered the shortfall of six years before.[12] By 1980, some grades of oil were priced at as much as $40 per barrel.[13]

In the 1970's, as OPEC countries were taking an ever increasing percentage of production directly to market, and selling less through the oil companies, 69% of oil produced outside of the United States was in the hands of national oil companies (OPEC and others). By 1985 OPEC countries controlled two-thirds of the oil market and effectively enjoyed price-setting power.[14] By 1986, however OPEC had seen its share of the market shrink by 50%, largely due to increasing production and new oil finds in Britain, Norway, and Mexico. Increasing non-OPEC competition had a significant impact on price. Barrel prices fell below 1979 levels in 1986. As OPEC's cartel included several oil revenue-dependent developing nations, the decline in price was net with increasing production, pushing the price down further.[15] In the case of OPEC and oil production, decreasing competition clearly increased the price of oil and increasing competition clearly decreased the price of oil.

[10] Moran, Theodore H. (1987) "Managing an oligopoly of would-be sovereigns" in *International Organization*, Vol. 41, No. 4, pp. 575-607
[11] Moran, Theodore H. (1977) "Oil Prices and the Future of OPEC," in *Foreign Policy* vol. 1976-1977
[12] "Spot Market Oil Prices Lowest in Seven Years," *Houston Chronicle*, Feb. 4, 1986
[13] "How Politics Governs Oil Prices," *San Francisco Chronicle* May 28, 1986
[14] "Spot Market Oil Prices Lowest in Seven Years," *Houston Chronicle*, Feb. 4, 1986
[15] "Oil ministers in disarray in the face of falling price for oil," *Houston Chronicle*, July 8, 1985

BREAK-UP OF AT&T

The case of the breakup of American Telephone and Telegraph (AT&T) clearly demonstrates the positive effect on price when competition is introduced into a competition-limited market environment. In 1982, at the conclusion of the US government's largest anti-trust case prior to Microsoft, AT&T agreed to divest itself of its local telephone service components (later to be called "baby bells") by 1984. With assets valued at $125 billion, at that time AT&T was larger than U.S. Steel, General Motors, and Exxon combined.[16] It was the second largest employer after the federal government. AT&T had a monopoly over local and long distance telephone service in the United States. Many commentators anticipated that the divesture and increased competition would bring down prices significantly. First, AT&T had engaged in some cross-subsidy of local phone services by inflating the price of long distance calling. Second, AT&T had previously had no incentive to keep prices down, and had used their monopoly position to fund a high level of research and development and generous employment packages for their workers. Though the initial years of competition following the divesture were somewhat confusing for long distance consumers, the price of long-distance calling did fall. Adjusting for inflation, the cost of long distance calling is 10% today of what it was under the AT&T monopoly.[17] At the same time the value of the companies created out of the ashes of AT&T has grown by 1300% on a market capitalization increase of only 140%.[18]

At the time of divesture, AT&T's local operations were divided up into seven regional "Baby Bells". Each of these was awarded a protected regional monopoly over local telephone services.[19] This monopoly, enshrined until the Telecommunications act of 1996, allowed these local monopolies to set local phone service prices under regulatory oversight.[20] Since the 1996 act, local phone markets have seen increasing competition, in addition to the competitive pressures caused by technological change (e.g. cellular phones). In 1999, some 300 competitive local exchange carriers (CLECs), with a total capitalization of some $ 86 billion, were operating in the United States.[21] The next few years, however, brought a wave of bankruptcies and liquidations. Today, only 80-100 survive, with a total capitalization of about $ 4 billion. However, the extent of effective competition is unclear, as CLECs are reselling services on assets leased from the original market monopolies. When competitors are merely leasing facilities owned by others, they provide less of a real choice for consumers. The nameplate may

[16] Klein, Sonny (1981) The Biggest Company on Earth: A Profile of AT&T, New York: Rinehart and Winston
[17] "Trust-busting: a two-sided legacy," *Christian Science Monitor*, April 28,2000
[18] "Commentary: The Lessons of the AT&T Breakup," *Business Week*, November 22, 1999
[19] ibid
[20] "Local Telephone Competition: Unbundling the FCC's Rules," *Heritage Foundation Reports*, February 10, 2003
[21] Association for Local Telecommunications Services (2002) *Progress Report on the CLEC Industry,* October 17, 2002

be different, but ultimately, to the extent they lease their product from the incumbent provider, they offer the same old product to the consumer. As the FCC continues to move toward a total unbundling of service provision and assets, it is anticipated that price competition will increase in local phone markets.[22]

The AT&T case demonstrates that even relatively benign regulated monopolies can significantly constrain service prices. Though the initial breakup of AT&T may have been difficult for some consumers, the over all impact of increased competition has been a large net benefit to consumers. This is particularly true in terms of price. The technological improvements that have occurred over the past twenty years may or may not be connected to the competition increase, but the drastic drop in prices is directly related to the increase in competition.

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION RESIDUALS MANAGEMENT

In 1997 the New York City Department of Environmental Protection (DEP) completed a competitive selection for Biosolids (Residuals) Management for the period July 1, 1998 through June 30, 2013. The DEP chose to select a group of companies, rather than select a single firm, to fulfill its residual management needs. This approach not only met their desire to promote the beneficial use of sludge products, but helped maintain a competitive marketplace. The following table presents a summary of the New York City results.

New York City Long-Term Biosolids Management Contracts
July 1, 1998 through June 30, 2013

Projected Allocation of Bio-Solids and Costs[(1) (2)]			
Process	Unit Cost $/DT	% of Biosolids (DT)	Projected % of Cost
Pelletization	$440.74	42.5%	49.3%
Land Application in Texas	$362.96	27.3%	26.1%
Composting in Pennsylvania	$319.00	13.5%	11.3%
Alkaline Stabilization in New Jersey	$302.78	16.7%	13.3%
		100%	100%

Notes:

(1) Based on a minimum projection of sludge quantities.

(2) Includes electricity costs.

[22] "Local Telephone Competition: Unbundling the FCC's Rules," *Heritage Foundation Reports*, February 10, 2003

All of these selected processes include complete biosolids management starting with hauling wet sludge cake from New York City's treatment facilities, through treatment, to the ultimate reuse or disposal of the biosolids.

New York City's DEP estimated the costs of biosolids management were reduced by at least 43 percent as a result of the re-procurement of its biosolids management contracts (i.e., from $97 million to $55 million).

Through its competitive process the NY DEP was able to significantly reduce the cost of its biosolids residual management. By making multiple awards it is helping to promote and maintain this competitive market. It was the DEP's experience in using the competitive marketplace to reduce its residuals management cost that led in part to the Massachusetts Water Resources Authority deciding to re-procure its sludge management services, as discussed below.[23]

MASSACHUSETTS WATER RESOURCES AUTHORITY RESIDULS MANAGEMENT

The Massachusetts Water Resources Authority (MWRA) initially entered into a contract with New England Fertilizer Company (NEFCo) on March 15, 1988. The original contract had two parts: one part to design and permit the Interim Sludge Processing and Disposal Facility and the second part to operate and either market or dispose of the pelletized biosolids. Operation of the palletizing plant began in December 1991 with the original operation and maintenance contract completion date of December 31, 1995. This contract was amended three times extending it though May 31, 2001.

Although the original contract was competitively procured, the contract extensions were negotiated. Continued negotiated contract extensions results in market conditions that are similar to a regulated monopoly (see prior discussion on "evergreen" contracts). As such the negotiated price savings and service enhancements did not reflect competitive prices.

Recognizing this fact, the MWRA re-procured the operation and maintenance of the palletizing facility and the marketing/disposal of the resulting dried sludge products. Five firms were qualified as a result of a request for qualifications issued on May 17, 2000 and were issued a Request for Proposals on June 22, 2000. Three proposals were received on January 25, 2001.

[23] *Management Study*, Massachusetts Water Resource Authority, Prepared by HDR Engineering, Inc. 1998.

As a result of this competition, the MWRA awarded a 15 year contract to NEFCo, the company already doing the work. For the first year of the new agreement (i.e., FY 02), NEFCo's competitively priced service was 40 percent below its then current price under the old contract. In 2001 dollars MWRA "staff estimate that the current (old) contract would cost ratepayers an estimated $95 million (34 percent) more than the proposed new price over the life of the contract."[24] This savings would not have been realized if the MWRA did not have the ability to competitively procure this service.

Repeated extensions of contracted services creates a "contract monopoly" that has similar characteristics to a "regulated monopoly" and tend to result in higher costs and reduced quality of service. The MWRA, by implementing a competitive procurement process, was able to realize an estimated 34% reduction in cost from the company that was already providing the service.

NEW LONDON, CONNECTICUT WATER/WASTEWATER SYSTEM OPERATION AND MAINTENANCE CONTRACT SERVICES

The City of New London's Department of Public Utilities (DPU) provides water and sewer services to residents and businesses in the City and various adjacent communities. The City Council appoints members of the community to the Water and Water Pollution Authority (Authority) to oversee the DPU and advise the City Council on water and sewer matters.

There are approximately 14,000 water customers served that use a daily average of 6.1 MGD. Water is distributed through 120 miles of water main with three (3) storage tanks. The City owned 10 MGD regional wastewater treatment plant (WWTP) treats approximately 8.2 MGD servicing approximately 6,000 customers with approximately 80 miles of sewer lines and eight (8) pump stations.

On March 24, 1997, the City of New London entered into a contract with US Filter (formally the Professional Services Group) for the operation and maintenance of its water and wastewater systems and its utility customer service functions. During the last year (i.e., 2002) of this agreement the base compensation paid the company was approximately $4.84 million.

This contract was scheduled to expire on March 23, 2002, but was extended to facilitate the negotiation of a new contract between the Authority and US Filter. The City Council, however, wanted to take advantage of the competitive market and directed the Authority to end negotiations with US Filter and issue a Request for Proposal (RFP) for the new contract.

[24] *Staff Summary*, Memo from Douglas B. MacDonald, Executive Director to the MWRA Board of Directors,

The City of New London issued its RFP for Water and Wastewater Services on July 17, 2002.[25] Six proposals were received on September 12, 2002. The results of the price proposal evaluation are present in the following Table.[26]

Price Proposal Evaluation Results

Proposer	**Annual Cost** (a)	**NPV of Contract Value** (b)
Earth Tech	$4,483,136	$20,187,039
Aquarion Services	$4,730,667	$21,301,644
US Filter	$5,082,209	$22,884,597
American Water	$5,209,233	$23,456,570
United Water	$5,666,497	$25,515,576
OMI, Inc.	$6,002,754	$27,029,702

(a) Assumes a 2.8% annual escalation rate.
(b) Assumes a 5.5% discount rate.

The lowest cost proposer's (i.e., Earth Tech's) net present value price was approximately $1.11 million below the second lowest proposer. US Filter's (the then incumbent operator's) competitive price was approximately $2.70 million (or 13.4%) more that the lowest cost proposer. More importantly, the lowest cost proposer's first year cost was approximately $361,000 lower than the fee paid by the City prior to the competition. Over the life of the new contract the City anticipates saving approximately $1.62 million over the costs of the existing contract, assuming the 2002 fee is escalated annually. The use of the competitive market place will result in an estimated 8.1% savings over the life of the new contract.

All of these non-solid waste market examples illustrate the benefits of competition and conversely the negative affects of limiting competition as expected from the economic theory presented in Appendix B, The Theoretical Basis for Market Competition.

February 14, 2001.
[25] *Request for Proposals for Water and Wastewater Services*, City of New London, July 17, 2002.
[26] Price Proposal Review Report, Prepared by HDR Engineering, Inc. for the City of New London, October 28, 2002.